

Research Highlights

How to Improve Childhood Asthma Outcomes

A Blueprint for Policy Action

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Almost everyone knows a child with asthma. In the United States, an estimated 5 million children suffer from this disease. For some, asthma is fatal. The number of asthma cases is increasing rapidly: Between 1980 and 1994, the increase for children under five years old was more than 160 percent. For children ages 5 to 14, the increase was 74 percent.

Asthma is expensive. It cost an estimated \$10.7 billion in the United States in 1994—more than half for direct medical expenses (including a sizable portion for hospitalization and emergency room visits), the rest for indirect costs associated with school and work days lost, as well as with premature mortality.

As part of the Robert Wood Johnson Foundation's Pediatric Asthma Initiative, RAND Health assembled an interdisciplinary committee of nationally recognized experts and leaders in childhood asthma. Their mandate: to develop specific policy recommendations to help improve childhood asthma outcomes in the United States.

As a first step, the committee reviewed 63 draft asthma-related policy recommendations, judging each on strict criteria such as feasibility of implementation, reduction of costs, and improvement of overall outcomes. In the end, the committee chose 11 specific recommendations designed to achieve an overall policy objective: *to promote asthma-friendly communities nationwide*. The methods used to develop the recommendations, and the implementation and funding options for each, are described in the RAND publications cited at right. The recommendations can be adopted in stages and over time. With a further commitment of national resources, they would lead to major improvements in childhood asthma outcomes in the United States.

Asthma-Friendly Communities Are the Key to Reducing Asthma

Asthma is a complex disease. Although not enough is known about its cause, we do know that risk factors include genetic predisposition, environmental exposures (including tobacco smoke, furry pets, dust mites, and cockroaches), poverty, and inadequate health care services. Therefore, an effective strategy for reducing the disease must address multiple fronts. This is particularly important for low-income and minority children, who suffer a greater burden from asthma. They are less likely to have the resources to deal with the disease, and certain racial and/or ethnic groups may also have a greater genetic predisposition.

This Highlight summarizes RAND research reported in the following publications:

Lara M, Rosenbaum S, Rachelefsky G, Nicholas W, Morton SC, Emont S, Branch M, Genovese B, Vaiana ME, Smith V, Wheeler L, Platts-Mills T, Clark N, Lurie N, Weiss KB. Improving Childhood Asthma Outcomes in the United States: A Blueprint for Policy Action. *Pediatrics*. 2002;109(5):919-930.

Lara M, Nicholas W, Morton S, Vaiana M, Genovese B, Rachelefsky G. 2001. *Improving Childhood Asthma Outcomes in the United States: A Blueprint for Policy Action*. RAND MR-1330-RWJ.

Nicholas W, Lara M, Morton SC. 2001. *Improving Childhood Asthma Outcomes in the United States: A Blueprint for Policy Action: A Description of Group Process Methods Used to Generate Committee Recommendations*. RAND MR-1330/1-RWJ.

This RAND Health project was inspired by a patient of one of the RAND researchers on the committee. Fabiola's story illustrates what can happen to children whose asthma goes unmanaged. Although Fabiola is doing well now, it took nearly 10 years after she was diagnosed to overcome the barriers inherent in the nation's current asthma health care policies, and get her on track with an effective treatment regimen that her family could afford. Her experience is all too common.

A Child with Asthma

Fabiola is a bright, active Latina teenager: a good student, a cheerleader, and a member of the school choir. She also has asthma.

At age 10, Fabiola was referred to the county asthma clinic, where she was put on a regular program of preventive medication. Her symptoms improved dramatically for a while. But then she was hospitalized for asthma. Her working parents received a hospital bill for nearly \$10,000. They did not qualify for Medicaid, and their employers did not offer insurance. They began paying the bill as best they could. However, they could no longer afford asthma medications or regular checkups.

One night Fabiola stopped breathing. Fortunately, the paramedics arrived swiftly and were able to restore her breathing. She was taken to an intensive care unit. At discharge, she was advised to return to the asthma clinic.

Back on aggressive preventive medication therapy, Fabiola's symptoms improved. Since then, her father has taken a new job that offers insurance coverage. Fabiola is nearly symptom-free and is doing well at school.



Self-portrait by Fabiola

Asthma's alarming increase has attracted state and national attention. Effective leadership at these levels is vital if the disease is to be controlled. However, the community level is where medical care and social, educational, and environmental services actually touch children's lives. The committee's overarching policy objective of promoting asthma-friendly communities nationwide recognizes the community's importance. In an asthma-friendly community, children with asthma are quickly diagnosed and receive appropriate and ongoing treatment; health care, school, and social agencies are prepared to meet the needs of children with asthma and their families; and children are safe from physical and social environmental risks that exacerbate asthma.

The RAND committee also identified six policy goals to meet its objective of promoting asthma-friendly communities:

- Improve access to and quality of asthma health care services.
- Improve asthma awareness among patients, their families, and the general public.
- Ensure asthma-friendly schools.
- Promote asthma-safe home environments.
- Encourage innovation in asthma prevention and management.
- Reduce socioeconomic disparities in childhood asthma outcomes.

The committee's 11 policy recommendations for meeting these goals fall into two broad areas:

- Improve health care delivery and financing.
- Strengthen the public health infrastructure.

Policy Recommendations to Improve Health Care Delivery and Financing

1. Develop and implement primary care performance measures for childhood asthma care. The appropriate use of preventive medications would allow almost all children with asthma to lead normal lives. However, in many cases, there is a significant gap between the evidence-based guidelines outlined by the National Asthma Education and Prevention Program (NAEPP) and the care children actually receive in the primary care setting.

Effective provider education on specific primary care performance measures, along with monitoring systems and financial incentives, would help ensure adherence to the NAEPP guidelines.

2. Teach all children with persistent asthma and their families a specific set of self-management skills. When children and their families know how to manage asthma, many emergency department visits and hospitalizations can be prevented. NAEPP's current recommendations for asthma self-management are excellent. These recommendations should be rewritten in user-friendly, easy-to-understand terms in the most commonly spoken languages in the United States. Insurers and health care organizations could then provide the recommendations to children and their families.

3. Provide case management to high-risk children. Asthma case management is a comprehensive set of care and follow-up services provided by teams of medical professionals and social workers. Case management helps patients and their families cope with the disease and reduce its symptoms. Because case-management services are expensive, it makes sense to focus them on high-risk children.

4. Extend continuous health insurance coverage to all uninsured children. All children need health insurance, and continuous insurance coverage is critical for controlling asthma. Existing insurance mechanisms, including Medicaid and the State Children's Health Insurance Program (SCHIP), can go a long way toward achieving the goal of insuring all children. However, two groups of children remain at risk of being uninsured: children of working parents who do not qualify for public insurance but who do not have insurance from their employers, and children who are not citizens. The committee recommends

that Congress extend continuous health insurance coverage to all uninsured children; that states make maximum use of Medicaid and SCHIP; and that federal and state policies create incentives for employers to offer affordable coverage to all workers with children, and extend coverage to all children residing in the United States, regardless of legal status.

5. Develop model benefit packages for essential childhood asthma services. Merely having insurance is not enough; the insurance must provide reasonable-cost coverage for the range of medical services necessary to reduce asthma symptoms. Insurance benefits should include (but not be limited to) age-appropriate medications, delivery devices, and self-management education for children with asthma.

6. Educate health care purchasers about asthma benefits. Health care purchasers can use their purchasing power to ensure that all asthma patients in their member groups have access to benefits. Purchasers should be trained in how to use the contracting process to achieve this goal.

Policies to Improve the Public Health Infrastructure

7. Establish public health grants to foster asthma-friendly communities and home environments. The Children's Health Act of 2000 established asthma as a specific focus within the Public Health Service Act and authorized appropriation of funds to increase access to treatment in high-risk communities and improve asthma surveillance. The public health approach envisioned by the Act is necessary if children are to be provided with asthma-safe environments. Adequate funding and implementation of this legislation could promote multi-level coordination and provide communities with the resources they need to improve health care and other asthma-related services.

8. Promote asthma-friendly schools and school-based asthma programs. Asthma is the leading chronic illness-related cause of school absenteeism. In addition, many asthma attacks occur at school. Nonetheless, school personnel frequently lack the resources or training to recognize or treat asthma symptoms at school. Implementing performance measures for comprehensive and coordinated school health programs would help alleviate this problem.

Abstracts of all RAND Health publications and full text of many research documents can be found on the RAND Health web site at www.rand.org/health. RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND Health furthers this mission by working to improve health care systems and advance understanding of how the organization and financing of care affect costs, quality, and access. RAND® is a registered trademark.

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9. Launch a national asthma public education campaign. Evidence points to widespread misunderstanding and lack of information about asthma risk factors, symptoms, and management. A national public education campaign should be undertaken, including targeted messages to communities with special linguistic and cultural needs. The Surgeon General would be an appropriate spokesperson for the campaign.

10. Develop a national asthma surveillance system. This recommendation is intended to improve national data about asthma. Currently, these data are fragmented and inadequate for developing prevention, treatment, and management strategies.

11. Develop and implement a national agenda for asthma prevention research. A significant boost in funding of asthma research is necessary to advance medical knowledge about asthma treatment and to evaluate new strategies (such as environmental modification, immunological intervention, and lifestyle changes) for preventing and managing symptoms. More research on how to improve health care delivery systems is also essential.

Implementation Will Require Federal, State, and Local Cooperation Among Many Public and Private Agencies

Successful asthma policies must push the limits of the traditional health care system. Policy changes cannot stop at medical care; they must also address the social and environmental factors associated with the asthma epidemic. The health care system must coordinate effectively with public housing agencies, school systems, departments of recreation, and state environmental agencies. The complexity of the problem requires a level of focus and effort that has not occurred to date.

The organization best suited to lead much of the effort described in this Blueprint is the NAEPP, which includes more

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than 40 public and private member organizations. The NAEPP would also need to secure additional resources and solicit input from organizations that are not currently part of its membership. However, no single organization can implement the full range of policies described in this Blueprint. Implementation will require not only concerted leadership at the state and national legislative and executive levels, but also sustained grassroots efforts.

The asthma epidemic provides a unique opportunity for change. No public health problem better illustrates the need for a sustained, coordinated, multi-organization effort. The success of the intervention will depend on active involvement of the many public and private-sector agencies, institutions, community organizations, and health care delivery systems that affect children's lives. If a joint effort is achieved, change will come gradually, through sustained effort. This Blueprint provides a framework that can help integrate, direct, and monitor policy reforms at the national, state, and community level, and within and outside the health care system.

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